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Skrjabinelazia machidai sp. n. (Nematoda: Seuratidae) from *Gekko japonicus* on Okinawa Island, Japan[1]

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ABSTRACT — *Skrjabinelazia machidai* sp. n. (Nematoda: Seuratidae) is described from the stomach and small intestine of the gecko, *Gekko japonicus* taken on Okinawa Island, Japan. This species is readily distinguishable from other members of the genus by the round caudal extremity with an apical pit of female, absence of spicules in male and body dimensions. This is the sixth species of the genus and the first one from Japan.

INTRODUCTION

The nematode genus *Skrjabinelazia* Sypliaxov, 1930 is parasitic to lizards and geckos, and has many archaic characteristics which are supposed to link the superfamilies Cosmocercoidea and Thelazioidea [1]. Representatives of the genus have been known from Europe, Africa, South America, China, Russia and Australia. This paper describes a new species from Japan.

MATERIALS AND METHODS

Geckos, *Gekko japonicus* Duméril and Bibron, were captured in Sueyoshi Park, Naha, Okinawa, from February 1981 to June 1983. They were killed with ether and the alimentary canal was examined for parasites under a dissecting microscope. Nematodes were fixed in 70% ethanol at 70°C, cleared in a glycerin-alcohol solution, and mounted on slides with 50% glycerin jelly. Cephalic structures were studied on three heads of females mounted with apical side up.

RESULTS

Of 57 geckos examined, 26 (45.6%) harbored *Skrjabinelazia* nematodes in the stomach and small intestine. Of a total of 65 adult worms obtained, only 10 were males. The following description is based on 4 mature males, 5 oviparous females and 9 viviparous females.

Skrjabinelazia machidai sp. n. (Fig. 1)

Seuratidae, Skrjabinelaziinae, *Skrjabinelazia*. Body semitransparent. Sexual dimorphism prominent: males far smaller than females. Oviparous and viviparous females present. Mouth almost triangular, with delicate leaf crown, encircled by inner circle of six minute papillae, outer circle of four submedian double papillae and two amphids. Four weak elevation of cuticle present around mouth. Buccal cavity weakly developed, with chitinized wall. Esophagus cylindrical, gradually thickening posteriorly. Excretory pore just behind nerve ring.

Male Body minute, 1.06–1.20 mm in length, 43–55 μm in maximum width. Posterior part of body bent ventrad. Cuticle with faint transverse striations. Narrow lateral alae present on cuticle from cervical region to preanal region. Buccal cavity 4–6 μm in depth. Esophagus 168–198 μm long and 45–53 μm wide. Distance from cephalic apex to nerve ring and excretory pore 85–98 μm and 128–143 μm, respectively. Perianal region protruded. Four pairs of sessile papillae (2 preanal and 2 postanal) present. Tail long-conical, 118–125 μm long. Spicules absent. Gubernaculum

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[1] Helminth Fauna of the Ryuku Archipelago, Japan IV.

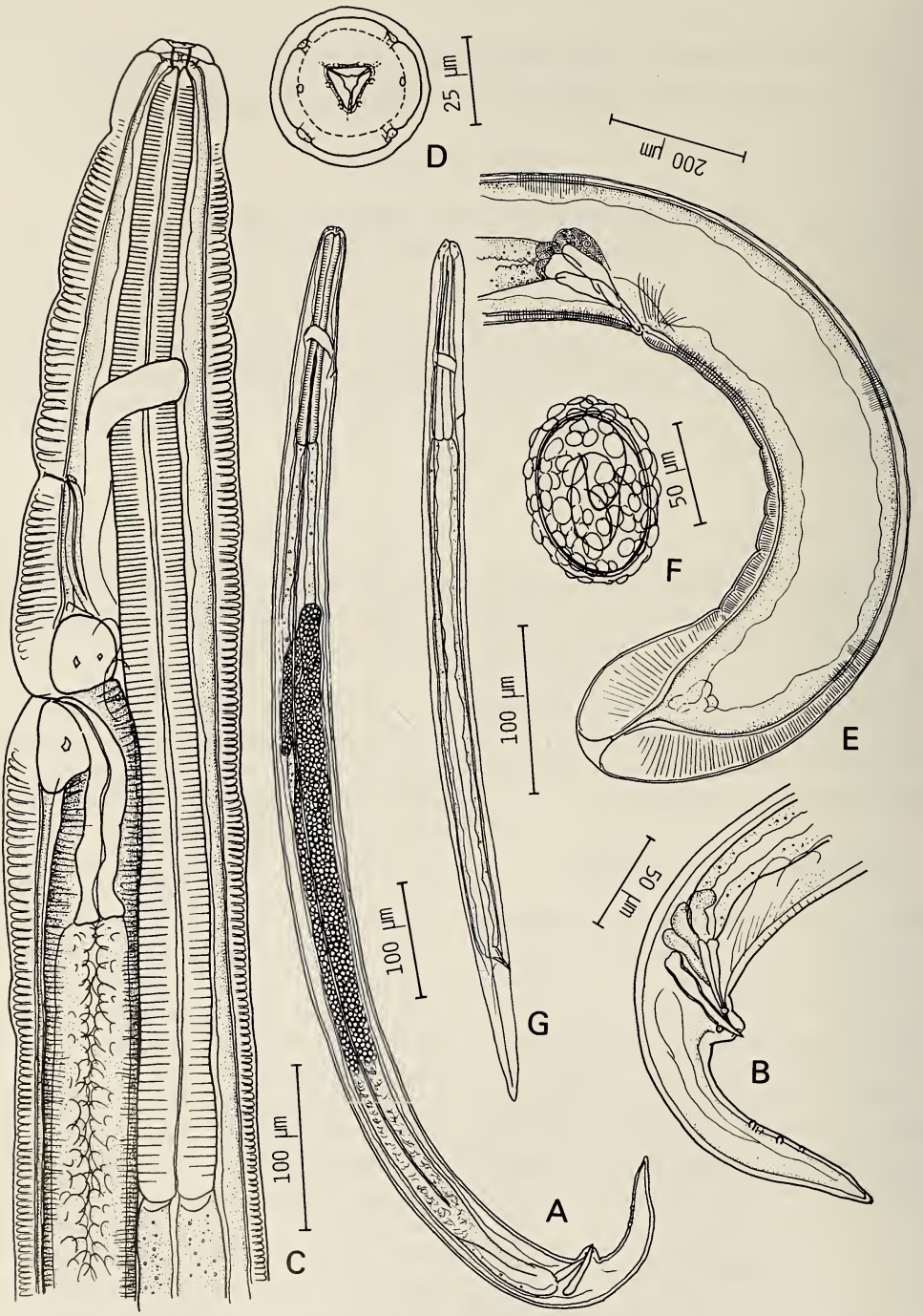

FIG. 1. *Skrjabinelazia machidai* sp. n. A: Male (allotype), lateral view; B: Posterior part of male, lateral view; C: Anterior part of viviparous female (holotype), lateral view; D: Caphalic extremity, apical view; E: Posterior part of female (holotype), lateral view: F: Egg from oviparous female; G: Larva from viviparous female.

triangular in ventral view, distally pointed, 45–53 μm long.

Oviparous female Body large, 25.6–30.3 mm long and 0.31–0.36 mm wide in midbody. Cuticle with transverse striations, expanded in both extremities, swollen to form a large oval or round vesicle in caudal portion. Buccal cavity 13–15 μm in depth. Esophagus 0.91–1.12 mm long and 68–80 μm wide near posterior end. Distance from cephalic end to nerve ring and excretory pore 0.21–0.28 mm and 0.28–0.35 mm, respectively. Vulva situated behind excretory pore, at 0.47–0.53 mm from cephalic apex, with anterior and posterior massive cuticular lips. Ovijector long, with well-developed sphincters, running posteriad to connect with bifurcation of uteri. Tail cylindrical, long, 0.85–1.27 mm in length, with round extremity. Tail body proper ending in a long, pointed process. Tail cuticle swollen toward caudal end, with an apical pit reaching to tip of process of body proper. Eggs in ovijector elliptical, yellow in color, thick-shelled, surface with many vesicular swellings, containing larva, 68–80 by 53–60 μm.

Viviparous female Closely similar in general morphology to oviparous females. Body somewhat smaller, 15.9–27.2 mm long, 0.20–0.31 mm wide in midbody. Buccal cavity 13–15 μm in depth. Esophagus 0.64–1.04 mm long and 45–58 μm wide in posterior end. Nerve ring, excretory pore and vulva at 195–258 μm, 0.26–0.33 mm and 0.39–0.48 mm, respectively, from cephalic apex. Anus at 0.70–1.07 mm from caudal end. Larvae in ovijector 0.44–0.52 mm long and 20–25 μm wide, with lateral alae; cephalic end with a tooth on dorsal side; nerve ring, esophagus, intestine and anus visible; tail conical, with pointed tip.

Type host: *Gekko japonicus* (Duméril and Bibron).

Site: Small intestine and stomach.

Locality: Sueyoshi Park, Naha, Okinawa, Japan.

Specimens deposited: Holotype female (viviparous), allotype male and paratype female (oviparous) in the National Science Museum, Tokyo (Coll. No. NSMT–As 1770); and other specimens including paratypes (3 males, 4 oviparous females and 8 viviparous females) in the Department of Parasitology, School of Medicine, University of the Ryukyus, Nishihara, Okinawa, Japan.

DISCUSSION

Five species have so far been described in the *Skrjabinelazia*: *S. taurica* Sypliaxov, 1930 from *Lacerta taurica* in Crimia [2]; *S. hoffmanii* Li, 1934 from *Eremias argus* in China [3], from *E. nikolskii*, *Lacerta agilis*, *L. saxicola*, *Tetrascincus scincus* and *Grossobamon eversmanni* in the USSR [4] and from *L. agilis* and *L. viridis* in Italy [5]; *S. intermedia* (Freitas, 1940) Chabaud, 1973 from *Tropidirus spinolosus* in Brazil [6, 9]; *S. ornata* Chabaud, Caballero and Brygoo, 1965 from *Phelsuma lineatus* and *Zonosaurus madagascariensis* in Madagascar [7, 8]; *S. galliardi* Chabaud, 1973 from *Gonadotes humeralis* in Brazil [9]. Angel and Mawson [10] found (but not illustrated) females of *Skrjabinelazia* sp. from *Phyllodactylus marmoratus* in Australia. No males have not yet been known of *S. ornata*, *S. galliardi* and *Skrjabinelazia* sp. of Angel and Mawson.

Skrjabinelazia machidai differs from *S. taurica*, *S. intermedia*, *S. ornata* and *S. galliardi* in having a swollen cuticle extending beyond the caudal tip of the body proper in females, and from *S. hoffmanni* in having an apical pit on female tail instead of a cuticular projection in the latter species. *Skrjabinelazia* sp. of Angel and Mawson is distinguishable from *S. machidai* by the female tail which narrows suddenly 300 μm behind the anus. Other characteristics separating *S. machidai* from the already-known species are as follows: the presence of spicules in the males of *S. taurica* and *S. hoffmanni*; stouter body in the females of *S. intermedia* (0.30–0.43 mm in worms 11.39–16.18 mm long) and *S. galliardi* (viviparous form, 0.34 mm in worm 16 mm long); longer esophagus in females of *S. ornata* (1.10 mm in worm 9.3 mm long) and *Skrjabinelazia* sp. of Angel and Mawson (1.2 mm in worm 18.3 mm long).

The presence of viviparous and oviparou[illegible] males is of special interest. This may be a [illegible] ical characteristics of the genus *Skrja*[illegible] since Chabaud [9] also described the tw[illegible]

S. galliardi. However, the biological significance of this phenomenon has not been elucidated yet.

Some of the whole-mounted female specimens of *S. machidai* had many vesicular structures in the cuticle. Similar structures have been described in *S. ornata* [7] and *S. galliardi* [9]. Nevertheless, the structures in the present species had not been observed before fixation. Therefore, they are considered to be of artificial nature.

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